

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-3, 6-10, 12, 16-18, 21-26, 28-34, 36, and 39-43 are pending in the application, with claims 1, 16, 29, 36, and 42 being the independent claims. Claim 35 is sought to be cancelled without prejudice to or disclaimer of the subject matter therein. New claims 39-43 are sought to be added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112

Claims 1-3, 6-10, 12, 16-18, 21-26, and 28-36 were rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. Applicants respectfully traverse this rejection.

Specifically, the Examiner objected to the limitation in independent claims 1, 16, 29, 35, and 36 that the adaptable constraint includes "a plurality of free variables defined by the user." Without acquiescing to the propriety of the rejection, Applicants have amended the independent claims to clarify that a user defines values for the free variables in a constraint.

Amended independent claims 1 and 36 recite "receiving a recommendation request including a plurality of values defined by a user, wherein the plurality of

values includes at least one value for each of the plurality of free variables in the [adaptable] constraint." Amended independent claim 16 recites "a constraint filter including at least one constraint having a plurality of free variables, wherein a value for each free variable is defined by the user. Amended independent claim 29 recites "the constraint filter applies a constraint to the parameters of the search, the constraint having a plurality of free variables, and each free variable in the plurality of free variables has a value defined by the user." Claim 35 was canceled by the above amendment.

Applicants submit that amended independent claims 1, 16, 29, and 36 and their respective dependent claims comply with the written description requirement. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Rejections under 35 U.S.C. § 103

Aggarwal and Breese

Claims 1-3, 6-10, 12, 29, 30, and 33-35 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Aggarwal et al, U.S. Patent No. 6,487,539 (Aggarwal) in view of Breese, et al, U.S. Patent No. 6,006,218 (Breese). Applicants respectfully traverse this rejection.

The combination of Aggarwal and Breese does not teach or suggest each and every feature of Applicants' amended independent claims 1 and 29. As acknowledged by the Examiner "Aggarwal et al. does not explicitly teach a method wherein the adaptable constraint includes a plurality of free variables defined by a user, receiving values for at least one of the plurality of free variables in the adaptable constraint,

binding the received values to the corresponding free variable to update the adaptable constraint." (Office Action, pp. 7-8). Breese does not overcome these deficiencies of Aggarwal relative to amended independent claims 1 and 29.

Breese describes methods and systems related to the use of "knowledge probability estimates to influence the ranking of search results." (Breese, Abstract). As described in Breese, the "various methods and apparatus of the present invention are directed to adjusting, e.g., correcting, the results of various search engines, such as collaborative filters." (Breese, col. 2, lines 30-33). In Breese, a list of recommendations is generated by a search engine. (Breese, col. 3, lines 8-10). The "value of the individual recommendations, in a list of recommendations, is adjusted, e.g., corrected, based on the estimated probability that a particular item being recommended to the user is already known to the user. By performing a re-ranking operation in this manner, the present invention achieves a more meaningful ranking of recommendations than is achieved using prior art approaches." (Breese, col. 3, lines 10-17). Breese further describes that a user may enter data that could be used to generate or modify the knowledge probability estimate which is used to adjust the value of individual recommendations generated by a search engine. (Breese, col. 8, lines 33-35; col. 11, lines 18-19). The knowledge probability estimate in Breese does not limit the search being performed by the search engine. In contrast to Breese, Applicants' invention, as recited in the independent claims, describes the use of an adaptable constraint having free variables with user defined values to constrain the search being performed.

Thus, Breese does not teach or suggest:

receiving an adaptable constraint to apply during searches performed in response to recommendation requests, wherein the adaptable constraint includes a plurality of free variables;

receiving a recommendation request including a plurality of values defined by a user, wherein the plurality of values includes at least one value for each of the plurality of free variables in the adaptable constraint;

binding the received values to the corresponding free variables to update the adaptable constraint;

performing a search of the plurality of items in response to the received recommendation request, wherein a set of search parameters is defined by the updated adaptable constraint

as recited in amended independent claim 1. Breese further does not teach or suggest:

applying, during a search of the plurality of items performed for each recommendation request, a series of filters to each of the items, the series comprising a constraint filter and a recommendation filter for furnishing a predicted rating value, wherein the constraint filter is selected based on attributes associated with the recommendation request, wherein the constraint filter applies a constraint to the parameters of the search, the constraint having a plurality of free variables, and each free variable in the plurality of free variables has a value defined by the user

as recited in amended independent claim 29. For at least these reasons, amended independent claims 1 and 29 are patentable over the combination of Aggarwal and Breese. Claims 2, 3, 6-10, and 12 depend from claim 1; claims 30, 33, and 34 depend from claim 29. For at least the above reasons, and further in view of their own features, dependent claims 2, 3, 6-10, 12, 30, 33, and 34 are patentable over the combination of Aggarwal and Breese. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Aggarwal, Breese, Valentin

Claims 16-18, 21-24, 26, 28, and 36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Aggarwal and Breese, in view of Valentin, et al, Canadian Patent No. 2,249,096 (Valentin).¹ Applicants respectfully traverse this rejection.

The combination of Aggarwal, Breese, and Valentin does not teach or suggest each and every feature of Applicants amended independent claims 16 and 36. As described above, the combination of Aggarwal and Breese does not teach or suggest "a constraint filter including at least one constraint having a plurality of free variables, wherein a value for each free variable is defined by the user" and "a recommender component configured to perform a search in response to a received recommendation request, wherein a set of search parameters is defined by the constraint, and to generate a recommendation list based on the constraint filter and the recommendation filter," as recited in amended independent claim 16.

Similarly, the combination of Aggarwal and Breese does not teach or suggest:

receiving a recommendation request including a plurality of values defined by a user, wherein the plurality of values includes at least one value for each of the plurality of free variables in the constraint;

binding the received values to the corresponding free variables to update the constraint;

incorporating the constraint into a constraint filter;

¹ Applicants note that the rejection in paragraph 27 of the Office Action only cites Aggarwal in view of Valentin. However, the arguments presented by the Examiner in paragraph 28 of the Office Action include Breese in the rejection. Applicants therefore have assumed that the omission of Breese in the rejection in paragraph 27 was a typographical error. If this assumption is incorrect, Applicants respectfully request that the Examiner issue a new Office Action clarifying the rejection and resetting the period for reply.

determining a cost for a first order, the first order being applying the constraint filter before applying the recommendation filter;

determining a cost for a second order, the second order being applying the recommendation filter before applying the constraint filter;

establishing one of the first and second orders as the lowest cost order based on the respective costs thereof;

applying a series of filters to each of the plurality of items during a search performed in response to the recommendation request, the series comprising the recommendation filter and the updated constraint filter in the lowest cost order, wherein a set of parameters for the search is defined by the constraint

as recited in amended independent claim 36.

Valentin does not overcome all the deficiencies of Aggarwal and Breese relative to amended independent claims 16 and 36, described above. Valentin is not directed to providing recommendations for display to a user. Instead, Valentin is directed solely to the optimization of a single relational database query. In Valentin, the query optimizer generates one or more query execution plans for a specific query. Each query execution plan specifies a set of operations to be performed and has an associated cost. The query optimizer evaluates the costs and determines the query execution plan having the lowest execution cost. (Valentin, p. 2, line 13 - p. 3, line 1). Thus, Valentin does not describe optimizing the execution order of multiple distinct queries. Furthermore, Valentin does not describe or suggest optimizing the execution order of multiple, independent filtering modules having processing separate and distinct from simple data retrieval. Valentin is simply directed to the optimization of a single query by breaking the query into related operations.

For at least these reasons, amended independent claims 16 and 36 are patentable over the combination of Aggarwal, Breese, and Valentin. Claims 17, 18,

21-24, 26, and 28 depend from claim 16. For at least these reasons, and further in view of their own features, dependent claims 17, 18, 21-24, 26, and 28 are patentable over the combination of Aggarwal, Breese, and Valentin. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Aggarwal, Valentin and Breese

Claim 25 was rejected under 35 U.S.C. §103(a) as being unpatentable over Aggarwal, in view of Valentin as applied to claims 16, 18, 20-24, 26-28, 36, and 38, and further in view of Breese. Applicants respectfully traverse this rejection. Claim 25 depends from claim 16. As described above, the combination of Aggarwal, Breese, and Valentin does not teach or suggest each and every feature of amended independent claim 16 described above. For at least these reasons, and further in view of its own features, claim 25 is patentable over the combination of Aggarwal, Valentin, and Breese. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Aggarwal and Valentin

Claims 31 and 32 were rejected under 35 U.S.C §103(a) as being unpatentable over Aggarwal in view of Valentin. Applicants respectfully traverse this rejection.

Claims 31 and 32 depend from amended independent claim 29. As acknowledged by the Examiner in paragraph 28 of the Office Action, Aggarwal does not teach or suggest every limitation of independent claim 29. (Office Action, p. 19). Specifically, the Examiner stated that Aggarwal does not teach "an apparatus wherein the adaptable constraint includes a plurality of free variables defined by a user,

receiving values for at least one of the plurality of free variables in the adaptable constraint, binding the received values to the corresponding free variable to update the adaptable constraint."

Valentin does not overcome this deficiencies of Aggarwal relative to amended independent claim 29. For at least these reasons, and further in view of their own features, dependent claims 31 and 32 are patentable over the combination of Aggarwal and Valentin. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Other Matters

In the Office Action, a short summary of "the invention" was provided. (Office Action, p. 2). Applicants respectfully disagree with this characterization of the invention. Applicants respectfully refer the Examiner to independent claims 1, 16, 29, 36, and 42 which recite various embodiments of the present invention.

New Claims

Claims 39-43 have been added by the above amendment. Claims 39 and 40 depend from amended independent claim 1 and claim 41 depends from amended independent claim 36. As discussed above, amended independent claims 1 and 36 are patentable over the combination of Aggarwal, Breese, and/or Valentin. Accordingly, for at least these reasons, and further in view of their own features, dependent claims 39-41 are also patentable over the combination of Aggarwal, Breese, and/or Valentin.

Claim 42 recites:

A computer program product comprising a computer useable medium including control logic stored therein, the control logic

enabling the generation of a recommendation list, the control logic comprising:

receiving an adaptable constraint to apply during searches performed in response to recommendation requests, wherein the adaptable constraint includes a plurality of free variables;

receiving a recommendation request including a plurality of values defined by a user, wherein the plurality of values includes at least one value for each of the plurality of free variables in the adaptable constraint;

binding the received values to the corresponding free variables to update the adaptable constraint; and

searching the plurality of items in response to the received recommendation request, wherein a set of search parameters is defined by the updated adaptable constraint

For the reasons described above, the combination of Aggarwal, Breese, and/or Valentin does not teach or suggest each and every limitation recited in newly presented claim 42. Claim 43 depends from claim 42. For at least these reasons, claims 42 and 43 are patentable over the combination of Aggarwal, Breese, and/or Valentin.

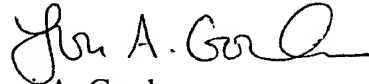
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested

Respectfully submitted,

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